**Alpha Rocket Lesson Plan- 5th Grade**

**Day 1**

1. Ask students if they have experience shooting rockets
2. Watch VHS tape of “Ignite the Imagination” \*We have to pass around the video, so it might not be at your campus on that particular day.
3. Show students the ALPHA III rocket
4. Show students the igniter system.
5. Go over NAR Model Rocket Safety Code found under STEP 11 on instructions page.
6. Go to field to launch Alpha III
7. Add baby powder to rocket parachute. Insert 3-4 pieces of paper wadding into rocket. Fold parachute as shown in STEP 10 on instructions page, and insert into rocket.
8. Load rocket by taking engine and placing a fuse in the end of it and place the cap at the end of the fuse to plug the fuse into the engine. Make sure that the 2 fuses do not touch. The fuses should not line up with the launch lug or fins.
9. Keep cap on stand post to prevent poked eye
10. Place stand in middle of Archery Field. Take off pole cap and insert Rocket.
11. Connect the launch system clamps to the fuses.
12. Get to safe distance. Count down loudly and launch. Do not let students run around. They must pick a location and stay their until the rocket lands.
13. Recover rocket
14. Go back to class and pass out rockets. Have students write their names on masking tape and place label onto the bag of their rocket bag. They are not opening the bag today.
15. Explain that the rocket sells for $13 and the engine is $3, so we will not replace any rocket that is built incorrectly…so listening and following directions is a must.

**Day 2 – build rockets**

1. Follow instructions on how to build Alpha rocket. \*\*Cut the top of the bag with scissors. Make them write their names on the side of the main tube and let them know that if they loose any piece, they will not launch the rocket.
2. Count pieces from the EXPLODED View from directions.
3. Follow steps from website <http://www.stormthecastle.com/model-rockets/estes-alpha-rocket.htm>
4. Complete Steps 1-4 on Day 1
5. Pick up materials

**Day 3 – build rockets** -continued

1. Complete Steps 5&6
2. Students will hand you the colors and let you paint their rockets. When you have time between phases, go to <http://www.joecool.org/rocket3.htm> and watch the top 2 videos, go over NAR rules, review Rocketeer’s Guide book on the whiteboard. Draw the Flight Sequence and have students identify the phases.

**Day 4 – build rockets** -continued

1. Complete Steps 7-9 and reinforce launch lug by placing glue on the sides. Do not get glue above or below the launch lug or the pole cannot get into the lug.
2. Students will hand you the colors and let you paint their rockets. When you have time between phases, go to <http://www.joecool.org/rocket3.htm> and watch the top 2 videos, go over NAR rules, review Rocketeer’s Guide book on the whiteboard. Draw the Flight Sequence and have students identify the phases.

**Day 5 – paint rocket or go watch PITCO launch if painting was completed on Day 4**

1. Collect rockets and check for fin stability and launch lug stability.
2. Go outside to archery field.
3. Put on gloves and use a paint stick to insert into bottom of rocket to avoid getting paint on hand.
4. Students will hand you the colors and let you paint their rockets.
5. Complete Step 11.

**Day 6-Launch rockets following same directions as Day 1**

1. Review the NAR rules.
2. Review the igniter steps
3. Have students load their engines and roll their parachute as in the direction.